AMERICAN MUSEUM NOVITATES

Number 431 Published by THE AMERICAN MUSEUM OF NATURAL HISTORY New York City Oct. 8, 1930

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SOME CHINESE FRESH-WATER FISHES[1]

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XXIV.—TWO NEW MANDARIN FISHES

The mandarin fishes (*Siniperca*) are essentially omnipresent in China, abundant, and variable. On the basis of material examined to 1928 the writer recognized the three classic forms, *chuatsi* and *chuantsi* of Basilewski and *scherzeri* of Steindachner,[2] finding *chuatsi* and *scherzeri* readily identifiable and quite unlike. The form which was identified with *chuantsi* (specimens from Anhwei) is superficially much like *scherzeri*, though perhaps as closely related to *chuatsi*. Since then, critical examinations of further material discloses a fourth elongate aberrant form in Fukien, a fifth which is quite distinct, remarkably constant in a series of specimens to hand, and which apparently does not reach a large size, in Kiangsi.

It is somewhat doubtful if *Coreoperca whiteheadi* from Hainan Island is indeed generically separable from *Siniperca*, but as it seems less closely related to any mainland form than these are to each other, that matter may rest in abeyance. The small scales of *Siniperca* are irregular and very difficult to count accurately, which vitiates somewhat this otherwise very useful specific criterion in the genus.

Siniperca elongata, new species

DESCRIPTION OF TYPE.—No. 9674, American Museum of Natural History, from Kienyang, northwestern Fukien, April, 1926, collected by Clifford H. Pope.

Length to base of caudal, 156 mm. Depth in this length, 4.8; head, 2.9. Eye in head, 5.5; snout, 3; interorbital, 7; maxillary, 2; width of body, 2.5; length of peduncle, 2.8; its depth, 4; pectoral, 2.1; ventral, 1.8; longest dorsal spine, 2.5; dorsal ray, 3; longest anal spine, 2.7; anal ray, 2.7; caudal, 1.8.

Dorsal XIII, 10½; anal, III, 7. Scales, about 130.

Little compressed, back not at all elevated; eye distinctly superolateral; snout pointed, lower jaw strongly projecting; mouth little oblique, maxillary to under posterior border of pupil or beyond; gill-membranes joining under middle of opercle,

[1] Publications of the Asiatic Expeditions of The American Museum of Natural History. Contribution No. 102.

[2] 'A Provisional Check-list, etc.,' Bull. Amer. Mus. Nat. Hist., LVIII, p. 51, Figs. 44, 45.

free from isthmus; gill rakers rudimentary. Teeth of moderate size, sharp, conical, irregular, in more than one row on jaws; fine teeth on vomer and palate, none on the tongue; an outer row of small crowded teeth at the sides of the lower jaw. Opercle ending in a sharp spine, with a smaller spine above it; two groups of slight serrations along its lower limb; scapular serrate; ascending limb of preopercle with sharp spines which are largest at the angle; and two forwardly directed spines on its lower limb. Pectoral symmetrical; ventral origin well behind pectoral axil; caudal slightly rounded. Scales small, cycloid; no evident scales on opercle or preopercle; lateral line complete.

Back and sides irregularly spotted; a few spots on the caudal, forming cross-bands posteriorly.

A single cotype is more boldly spotted on body and fins, much as in *Siniperca chuatsi*, and has the following measurements: standard length, 147 mm.; depth, 4.5; head, 2.9; eye, 4.6; dorsal, XIII, 10½; anal, III, 7; scales, about 120.

Siniperca obscura, new species

Description of Type.—No. 9675, American Museum of Natural History, from Hokou, northeastern Kiangsi, June 22 to July 12, 1926, collected under the direction of Clifford H. Pope.

Length to base of caudal, 81 mm. Depth in this length, 2.7; head, 2.9. Eye in head, 5; snout, 3.2; interorbital, 6.5; maxillary, 2.5; width of body, 1.5; length of peduncle, 3.6; its depth, 3.3; pectoral, 1.9; ventral, 1.8; longest dorsal spine, 2.1; dorsal ray, 2.8; longest anal spine, 2.1, anal ray, 2.4; caudal, 1.9.

Dorsal, XIII, 10; anal, III, 8. Scales, 75.

Moderately compressed, back little elevated, eye slightly superolateral; lower jaw slightly projecting; mouth moderately oblique, maxillary not extending quite to under middle of eye; gill-membranes joining narrowly free from isthmus under hind part of preopercle; 6 developed gill-rakers. Teeth of moderate size, subequal, sharp, conical, in several rows on the jaws; fine teeth on vomer and palate, none on the tongue. Opercle ending in a sharp spine, with a smaller spine above it; a scapular spine; ascending limb of preopercle with several small spines, 3 on its lower limb, the two anterior turned forward, a larger spine at the angle. Pectoral symmetrical, rounded; ventral origin behind pectoral axil; caudal slightly rounded; middle anal spine enlarged, so that it laps well past the tip of the third when depressed. Scales small, cycloid, no evident scales on opercle or preopercle; lateral line complete.

Color dusky, pale on the belly; sides with obscure dark blotches; fins essentially unmarked.

Fifteen additional specimens with the same data measure as follows:

Standard Length	Depth in Length	Head	Eye in Head	Dorsal	Anal	Scales
49 mm.	2.9	2.9	3.8	XIII, 10½	III, 8	est. 85
55	2.9	2.9	4	XII, 10	III, 8	est. 85
57	2.7	2.9	4	XII, 10	III, 8	85
59	2.6	2.9	4.3	XIII, 10	III, 8	85
60	2.9	2.9	4	XIII, 10	III, 8	80
60	2.9	2.8	4.3	XIII, 10	III, 8	80
61	2.7	2.8	4.2	XIII, 10	III, 7	80
63	2.8	2.8	4	XIII, 10	III, 8	80
64	2.8	2.8	4.5	XIII, 10	III, 8	80
65	2.7	2.9	4.5	XIII, 10	III, 7½	est. 75
66	2 8	2.9	4.5	XIII, 10	III, 8	75
67	2.8	2.9	4.7	XIII, 10½	III, 8	73
68	2.9	2.9	4.5	XIII, 10	III, 8	73
72	2.9	2.9	4.5	XIII, 10	III, 7½	75
72	2.6	2.9	4.5	XIII, 10	III, 8	80

In addition to the above, a single specimen from Yungtai Hsien, Fukien, is referable to this species. It measures as follows: standard length, 55 mm.; depth, 2.6; head, 2.6; eye, 4; dorsal, XIII, 10; anal, III, 8; scales, 90 or 100.

Siniperca chuantsi (Basilewski)

Boulenger (1895, 'Cat.,' 2d Ed., I, p. 136) synonymizes *S. chuantsi* with *chuatsi*, but in our opinion it may be referred with reasonable certainty to a recognizable form, a specimen of which from Hokou, Kiangsi, is described below.

Length to base of caudal, 144 mm. Depth in this length, 3.6; head, 2.7. Eye in head, 5.7; snout, 3.2; interorbital, 5.7; maxillary, 2; width of body 2.1; length of peduncle, 2.9; its depth, 3.8; pectoral 2.4; ventral, 2.2; longest dorsal spine, 4.4; dorsal ray,.3.7; longest anal spine, 3.7; anal ray, 3; caudal, 2.

Dorsal, XII, 13; anal, III, 9. Scales about 140.

Little compressed, back not elevated, eye slightly superolateral; lower jaw decidedly projecting; mouth little oblique, maxillary extending to under posterior margin of pupil or beyond; gill-membranes joining narrowly free from isthmus under middle or front part of preopercle; 4 developed gill-rakers. Teeth unequal, sharp, conical; in several rows on the upper jaw, where the midline is toothless and 2 or 3 teeth adjacent to it somewhat enlarged; in several rows on the front of the lower jaw, with wide-spaced enlarged teeth on the sides of same; fine teeth on vomer and palate,

none on the tongue. Opercle ending in a spine, with a shorter, broad, blunt spine above it; a blunt scapular spine; ascending limb of preopercle serrate, its lower limb with 2 or 3 more or less antrorse spines. Pectoral symmetrical, rounded; ventral origin behind pectoral axil; caudal rounded; tip of middle anal spine about reaching that of the last spine when depressed. Scales small, cycloid; opercle and preopercle scaled; lateral line complete.

Sides well covered with dark spots and blotches, the larger tending to form rings; dorsal and caudal spotted, and anal with a few spots.

Two other specimens with the same data, have the following measurements:

Standard Length	Depth in Length	Head	Eye in Head	Dorsal	Anal	Scales
66 mm.	3.5	2.6	5	XII, 13	III, 9½	est. 120
204	3.2	2.9	6.1	XII, 13	III, 9	120

The five species of *Siniperca* recognized here may be identified by the following key.

1.—Depth (in standard length), 4.5 or more (at about 150 mm.); gill-rakers rudimentary; dorsal rays XIII, 10 or 11; scales, about 130..... *elongata.*
Depth, 3.5 or less (at lengths up to 190 mm.); gill-rakers, 4 to 6; dorsal rays XI to XIII, 10 to 15; scales, 100 to 180..... 2.
Depth, 2.6 to 2.9 (at 50 to 80 mm.); gill-rakers about 7; dorsal rays XIII (rarely XII), 10 (rarely 11); scales, 73 to 85; middle anal spine elongate and lapping well past the third when depressed..... *obscura.*

2.—Dorsal XIII, 10 to 13; scales, 100 to 150; eye smaller (5 or 6 in head) and back not elevated; depth, 2.8 to 3.5 (at 50 to 150 mm.); more finely mottled, spots forming rings on sides..... *scherzeri.*
Dorsal XII, 12 or 13; scales, 120 to 140; otherwise like the preceding.. *chuantsi.*
Dorsal XII (rarely XI or XIII), 13 to 15; scales, 145 to 180; eye larger, 4 to 5.5 in head (at 80 to 190 mm.); back more or less elevated, depth 2.7 at 80 mm. to 3.3 at 194 mm.; spots on sides rarely forming rings..... *chuatsi.*

Specimens of *Siniperca chuatsi* have now been examined from Tungting Lake; Ningkwo, Anhwei; Kienning and near Yenping, Fukien; of *S. chuantsi* from Ningkwo, Anhwei; Hokou, Kiangsi; of *S. scherzeri* from Tungting Lake; Hokou, Kiangsi (inseparable but not typical); and Kienyang, Fukien.

Small *Siniperca*, at standard lengths less than 50 or 55 mm., tend to have the lower jaw very prognathous, anterior profile of head and back slanting, and specific characters more or less obscured. Thus, a specimen of *S. scherzeri* of 47 mm. from Hokou has depth 2.8, back elevated,

eye 4 in head, but is obviously this species, fitting in a series of same of 50, 64, 69, 111 mm. and larger, and with dorsal XIII, 12. Another small specimen of 54 mm. with the general locality Fukien is puzzling (depth 3.4, back only slightly elevated, eye 4, dorsal XII, 14). Fin count seems almost the only character to place it with *S. chuatsi*, but from comparison with a fish of that species of 56 mm. from Ningkwo (depth 2.8, back elevated) it seems probable that it is such. On the other hand, *S. obscura* down to 49 mm. are very like those of larger size.

XXV.—*NEW SARCOCHEILICHTHYS* IN NORTHEASTERN KIANGSI

We have from Hokou, northeastern Kiangsi, four specimens of this usually abundant genus, collected under the direction of Clifford H. Pope, June 22 to July 12, 1926, which are quite unlike what was to be expected. Elsewhere in China, one or another race of the subgenus *Chilogobio* has been found to occur, frequently with *S.* (*Barbodon*) *sinensis*, than which they are somewhat smaller fishes. Here, however, is a minnowlike dwarf form of the subgenus *Barbodon*, apparently adult on account of horny processes on the head; and with it two larger specimens, unusually large for *Chilogobio*, differing from the various races of *S.* (*Chilogobio*) *nigripinnis* about as these differ from one another, but with characters of the typical subgenus *Sarcocheilichthys*, represented by *S. variegatus* of Japan (with which they have been compared).

Sarcocheilichthys (Barbodon) parvus, new species

Description of Type.—No. 9676, American Museum of Natural History, from Hokou, northeastern Kiangsi.

Length to base of caudal, 57 mm. Depth in this length, 3.8; head, 4.8. Eye in head, 3.6; snout, 2.7; interorbital, 2.6; maxillary, 2.6; width of mouth, 4.5; length of mouth, 4.5; width of body, 1.6; depth of peduncle, 1.6; its length, 1.1; pectoral, 1; ventral, 1.2; longest dorsal ray, 1; longest anal ray, 1.2; cuadal lobe, 0.9.

Dorsal, 9; anal, 8. Scales, 36.

Not much compressed, vent at three-sevenths the distance from ventral axil to anal origin. Top of head slightly convex; side of snout with two groups of well-developed horny warts; lower jaw with a horny tip; a very minute barbel present; gill membranes broadly joined to side of breast behind middle of opercle. Dorsal and anal without spinous rays; dorsal origin equidistant from end of snout and proximal third of last anal ray when depressed; ventral origin a little behind that of dorsal; its base before center of dorsal base; dorsal margin slightly convex, anal even; pectoral extending three-fourths the distance to ventral, ventral two-thirds to anal; caudal moderately forked. Scales with slightly radiating striæ; lateral line complete, straight, in the middle of side, rising a little at front end to meet opercle.

Dark on the back, and in a band from snout to caudal, which is broadest (about as broad as eye) posteriorly. Dorsal and caudal grayish, dorsal with a faint dusky cross-streak; pectoral pale; ventral and anal more or less dusky.

The cotype has length, 40 mm.; depth, 4; head, 4.6; eye, 3.1; dorsal, 9½; anal, 8½; scales, 36; warts present, less developed.

As the striking color of this form may be due to small size, its low scale count is perhaps its best differentiating character.

Sarcocheilichthys kiangsiensis, new species

DESCRIPTION OF TYPE.—No. 9677, American Museum of Natural History, from Hokou, northeastern Kiangsi.

Length to base of caudal, 129 mm. Depth in this length, 4.6; head, 4.7. Eye in head, 4.5; snout, 2.4; interorbital, 2.9; maxillary, 3.4; width of mouth, 4; its length, 6; width of body, 1.7; depth of peduncle, 1.9; its length, 0.9; pectoral, 1.3; ventral, 1.4; longest dorsal ray, 1.5; longest anal ray, 1.8; caudal lobe, 0.9 (est.–broken).

Dorsal, 9½; anal, 8. Scales, 43.

Moderately compressed, vent about midway between ventral axil and anal origin. Top of head slightly convex; mouth small, somewhat inferior, horizontal, curved; lips thickish, leaving the mandible free, which has a narrow columnar base and expanded end, the end somewhat callous or slightly horny; a distinct thickish rudiment of a barbel at either side of mouth, with tip barely free; gill-membranes broadly joined to breast under middle of opercle. Dorsal and anal without spinous rays; dorsal origin equidistant from end of snout and end of last anal ray when depressed; anal base under or slightly before middle of dorsal base; dorsal and anal margins slightly concave; pectoral and ventral rounded; pectoral extending two-thirds the distance to ventral, ventral three-fifths to anal; caudal forked. Scales with close-set slightly radiating striæ; lateral line complete, in the middle of side, rising a little to meet opercle.

Somewhat darker above, with irregular, scattered, narrow, dusky bars and spots,—and pale below; a vertical black bar behind the gill opening. Dorsal grayish; caudal lobes slightly dusky; lower fins pale.

The cotype has length, 141 mm.; depth, 4; head, 4.7; eye, 4.8; dorsal, 9; anal, 8½, scales, 43.